



Microalgae-mediated capture and biofixation of CO₂ from combined cycle power plant flue gases: Valorization and commercialization of the biomass

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As part of the portfolio of the European Commission, AlgaEnergy promoted and led Project CO₂ALGAEFIX, an initiative co-financed within the frame of the LIFE+ 2011 Program. This project involved the rational escalation of microalgae cultivation facilities and aimed the biofixation of CO₂ from industrial flue gases into green, clean biomass and its transformation into bio-based products of commercial interest. The final scope was the build-up and operation of a microalgae cultivation plant located alongside a Combined Cycle Power Plant in Arcos de la Frontera (Cádiz), the largest one in Spain and the second in Europe with 1.6 GW of installed power. Initially planned to occupy 10,000 m², with 1,000,000 liters of microalgal culture volume and a capacity to produce up to 100 tons of dried biomass per year, the Plant is already operational producing high-quality biomass from different microalgae species. New photobioreactors are being installed which increase the production capacity of the plant, amongst them a greenhouse covered, fence-shaped, 95,000 liters tubular PBR consisting on more than 40 Km of glass-tubes. Either directly or following a proper downstream processing, the biomass generated in the production plant is used for different commercial sectors, including aquaculture, food, agriculture, feed and cosmetics.

